

CERTAMEN MELASTOMATACEIS XXII.

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Except for one Guyana interloper, the current notes center on the continuing registration of melastomes for inclusion in the Flora of Ecuador. Asplund, Harling, and their colleagues have provided almost endless new taxonomic perspectives and problems in the melastome flora of the Andean countries.

MICONIA CERCOPHORA Wurdack subsp. CANELOSANA Wurdack, subsp. nov.
Floribus paulo maioribus antherarum connectivis multiglandulosis differt.

Type Collection: Holguer Lugo 1636 (holotype GB; isotype US), from Canelos, Prov. Pastaza, Ecuador, 12 March 1971. "Tree. Corolla white."

Paratypes (both Pastaza, Ecuador): Lugo 1541 (topotypical); Lugo 1573, from Rfo Pacayacu near Canelos.

The typical element, collected at ca. 1000 m elevation, has petals 5 mm long, anther thecae 5.4 mm or 4.9 mm long, and eglandular anther connectives; the lower (ca. 500 m)-elevation subspecies has petals ca. 5.5 mm long, anther thecae 6.2-6.7 mm or 5.8-6 mm long, and anther connectives edged moderately with glands basally as well as dorsally above the base. No other differences are apparent.

MICONIA LUGONIS Wurdack, sp. nov.

M. calvescenti DC. affinis, foliorum venulis subtus paulo elevatis modice stellulato-puberulis calycis tubo brevioribus differt.

Arbor 5-9 m; ramuli robusti obtuse tetragoni demum teretes sicut petioli foliorum subtus venae primariae et secundariae inflorescentia hypanthiaque dense pilis pinoideo-stellulatis ca. 0.1-0.15 mm altis et diam. puberuli. Petioli 2-4 cm longi robusti; lamina 17-35 X 7-15 cm elliptico-oblonga apice acuto vel paululo (usque ad 1 cm) acuminato basi late obtusa vel rotundata, supra glabra, subtus in venis tertiariis venulisque sparse vel modice subpersistententerque stellulato-puberula, 5-nervata (pari exteriori bene evoluto 3-5 mm inframarginali) vel usque ad 1 cm plinervata nervis secundariis principalibus ca. 8 mm inter se distantibus sicut nervis tertiariis venulisque subtus paulo elevatis areolis ca. 0.5-0.7 mm latis. Panicula 10-18 cm longa multiflora, ramis primariis oppositis; flores 5-meri sessiles in ramulis pauciglomerulati, bracteolis ca. 0.5 mm longis subulatis. Hypanthium (ad torum) 2 mm longum; calycis tubus 0.3 mm longus, lobis interioribus 0.2-0.3 mm altis oblati, dentibus exterioribus minutis ca. 0.1 mm eminentibus. Petala alba extus minutissime granulosa 2.3-3 X 1-1.5 mm anguste obovata. Stamina paulo

dimorphica; filamenta 3.8-4.2 mm vel 2.7-3 mm longa glabra; antherarum thecae 2.4-2.7 vel 1.8-2 X 0.3-0.5 mm paulo subulatae poro 0.15-0.2 mm diam. ventraliter inclinato, connectivo 0.3-0.4 mm vel 0.1-0.2 mm prolongato ventraliter bilobulato lobis plerumque glandulis paucis ornatis. Stigma 0.5-0.6 mm diam. paulo expansum; stylus 6.2-7 X 0.2-0.3 mm glaber; ovarium 3-loculare et ca. 1/2 inferum, apice conico sparse puberulo.

Type Collection: Holguer Lugo 1729 (holotype US 2699432; isotype GB), from Puerto Sarayacu near Canelos, Prov. Pastaza, Ecuador, 20 March 1971. "Tree ca. 5-6 m high."

Paratypes (both Ecuador): Cazalet & Pennington 7581 (NY, US), from Taisha, Prov. Morona-Santiago, elev. 450 m; H. Lugo 1711 (GB, US), from Puerto Ubilla near Canelos, Prov. Pastaza.

Miconia calvescens has the leaf veinlets beneath plane and soon glabrous, generally proportionately broader leaf blades, and calyx tube 0.6-0.7 mm long, as well as much larger and promptly caducous floral bracteoles; the subandean population of the wide-ranging relative also has less distinctly developed exterior primary leaf veins and larger flowers, but these differences do not apply to the southeast Brazilian population. Miconia zubenetana Macbride has plane leaf venules, smaller flowers (petals 1.9-2 X 1.3-1.5 mm) with longer eglandular stamen connective prolongations, and a completely glabrous ovary; M. phlebodes Wurdack has plane and finely reticulate leaf venules and shorter petals; and M. dudleyi Wurdack (to which I have tentatively referred Harling, Storm, & Ström 9987, from Tungurahua, Ecuador, but with terete young branchlets) has basally attenuate leaf blades, inflorescence branches four per node, longer calyx tube, and non-prolonged eglandular stamen connectives.

MICONIA PASTAZANA Wurdack, sp. nov.

M. longifoliae (Aubl.) DC. affinis, foliorum laminis ad basim rotundatis staminum maiorum connectivis ad basim dorsaliter minus distincte appendiculatis differt.

Arbor 6-10 m alta; ramuli primum rotundato-quadrangulati demum teretes sicut inflorescentia primum sparse puberuli (pilis amorpho-pinoideis vix 0.05 mm latis) mox glabrati. Folia opposita vel 4-verticillata; petioli 0.3-0.5 cm longi et ca. 2 mm crassi; lamina 9-16 X 4-7.5 cm oblongo-elliptica apice paullo (0.5-1 cm) gradatimque hebeti-acuminato basi rotundata, subrigida et integra, subtus in venis primariis basim versus primum furfuracea mox glabrata alioqui glabra, breviter (usque ad 0.5 cm) 3-plinervata nervis secundariis principalibus 0.5-1 cm inter se distantibus nervulis subtus planis areolis ca. 1-1.5 mm latis. Panicula 10-18 cm longa lataque, ramis primariis in quoque nodo 4-8; flores 5-meri, pedicellis ca. 1 mm longis ad hypanthii basim articulatis, bracteolis ca. 0.2 mm longis angustis mox caducis. Hypanthium (ad torum) 1.2-1.5 mm longum primum sparse granuloso-furfuraceum glabrescens; calyx 0.2-0.3 mm longus essentialiter integer, dentibus exterioribus obscurissimis. Petala extus dense granulosa 1.3-1.6 X 0.6-0.9 mm

ovato-oblonga apice obtusiusculo. Stamina paulo dimorphica glabra; filamenta 1.5-1.9 mm vel 1.3-1.6 mm longa; antherarum thecae 0.9-1 vel 0.8-0.9 X 0.2 X 0.25 mm oblongae pro ca. 0.2 mm lato pro ratione magno ventraliter inclinato, connectivo 0.6-0.8 mm prolongato dorsaliter ad basim 0.15-0.2 mm vel 0.05 mm dentato. Stigma non expansum; stylus $4 \times$ 0.1-0.15 mm glaber; ovarium 3-loculare (ovulis in quoque loculo 4-5) et $1/2$ inferum, apice granuloso.

Type Collection: Holguer Lugo 1431 (holotype GB; isotype US), collected between Cuansha and Nalpi, Prov. Pastaza, Ecuador, 9 Feb. 1971. "Tree 5-6 m high."

Paratypes (all Pastaza, Ecuador, collected by H. Lugo): Nalpi, 1465; Nalpi-Canelos, 1481; Veracruz-Cabeceras, 1328; Cabeceras, 1356; Cabeceras-Chiquita, 1367; Chiquita, 1372; Chiquita-Puchu, 1392; Puchu, 1397; Puchu-Tolin, 1405.

Miconia longifolia has leaf blades acute at the base and the dorsal appendages of the large stamen connectives ca. 0.4 mm long, but similar foliage consistency and densely granulose petals. The other intimate relative, M. ternatifolia Triana, has thinner acute- to barely obtuse-based leaf blades with obscure (1-2 mm) pseudoplinervation, tenuous (ca. 1 mm diam.) longer (1-1.5 cm) petioles, and very obscurely granulose petals. Both relatives are also known from eastern Ecuador.

TOCOCA CHUIVENSIS Wurdack var. ECUADORENSIS Wurdack, var. nov.

Foliis subtus venis primariis exceptis esetosis floribus maioribus differt.

Type Collection: Holguer Lugo 1334 (holotype GB; isotype US), collected between Veracruz and Cabeceras, Prov. Pastaza, Ecuador, 20 Jan. 1971. "Ca. 1-1.5 m high; corolla rose-colored."

Paratypes: Colombia: Cuatrecasas 9003, Sucre, Caquetá, 1000 m elev.; Klug 1942, Umbría, Putumayo, elev. 325 m. Ecuador (Prov. Pastaza, except for 7572): Lugo 1597, Canelos; Lugo 1408, Puchu-Tolin; Lugo 1423, Tolin-Cuansha; Lugo 1350, Cabeceras; Lugo 1368, Cabeceras-Chiquita; Lugo 1376, Chiquita; Cazalet & Pennington 7572 (US), Taisha, Prov. Morona-Santiago, elev. 450 m.

The typical variety has the upper leaf surface and primary and secondary veins beneath persistently setose, dense to moderate cauline pubescence up to ca. 5 mm long, petals ca. 8.5 mm long, and anthers 5-5.5 mm long; var. ecuadorensis has the leaf blades above at length glabrous and the setae beneath on only the primary veins, rather sparse but robust cauline hairs to 1 cm long, petals 12-15 mm long, and anther thecae 6.5-7 mm long. Intermediate material (rather large petals but vegetative pubescence as in the typical variety) has been collected in both Colombia (Cuatrecasas 11295, Mocoa, Putumayo) and Ecuador (Mexia 6838, Puyo-Canelos, Pastaza). As alluded in the original description, T. occidentalis Naud. generally resembles T. chuivensis, but has the petals usually with 1-3 subapical external setulae, and the $1/2$ - $2/3$ -superior ovary with a collar (usually with ca. 10 glandular setulae 0.4-1 mm long) 0.4 mm

high around the style base (Mathews 1306, P). The following collections from Pastaza, Ecuador, elev. ca. 1100 m, have been referred to T. occidentalis: Canelos-Vera Cruz, Harling 3262 (S) and 3268 (S); Mera, Asplund 18445 (S), 19114 (S), 19893 (S); Colonia de Mayo, Lugo 410 (GB, US). Several of the collections of T. chuivensis var. ecuadorensis have some of the formicaria elongate as in T. acuminata Benth.; that species, however, restricted to the Pacific coast of Colombia, has essentially smooth small (8-9 mm long) petals and a well-developed (but glabrous and truncate) ovary cone 0.8-1.3 mm high.

CLIDEMIA OSTENTATA Wurdack, sp. nov.

C. involucratae DC. in pubescentia staminibus pistilisque affinis, foliis basaliter nervatis inflorescentia paniculata floribus non capitato-aggregatis differt.

Ramuli obscure rotundato-quadrangulati demum teretes sicut petioli inflorescentia hypanthiaque densiuscule setulosi pilis plerumque 0.5-1 mm longis laevibus p. p. glanduliferis. Petioli 1-2(-2.5) cm longi; lamina (5-)-7-11(-14) X (2.5-)-3.5-5(-6) cm elliptica apice gradatim per 0.5-1 cm acuminato basi obtusa vel rotundata, firme membranacea et integra, supra sparse appressosetulosa pilis p. p. glanduliferis, subtus sparsiuscule setulosa pilis gracilibus laevibus ca. 1 mm longis plerumque eglandulosis, 5-7-nervata nervis secundariis 3-4 mm inter se distantibus venulis subtus planis areolis ca. 0.3-0.4 mm latis. Paniculae terminales ca. 5-6 X 5-6 cm submultiflorae, ramis primariis oppositis; flores 5-meri, pedicellis 1-3 mm longis, bracteolis 1-1.5 X 0.3 mm setulosis ca. 0.7-1 mm infra hypanthium insertis. Hypanthium (ad torum) 4 mm longum; calycis tubus 0.1 mm altus, lobis interioribus 1 mm longis ovatis ciliolatis, dentibus exterioribus setulosis non vel paullulo (0.2 mm) eminentibus; torus intus glaber vel sparsissime glandulis 0.1 mm longis obsitus. Petala 4-4.4 X 1.2-1.8 mm obovato-oblonga apice plerumque rotundato extus paulo infra apicem setula glandulifera 0.4 mm longa plerumque armata alioqui glabra. Stamina essentialiter isomorphica glabra; filamenta 3.1-3.3 mm longa; antherarum thecae 3.2-3.8 X 0.5-0.6 mm subulatae poro 0.1 mm diam. ventraliter inclinato, connectivo ad basim ventraliter ca. 0.2 mm bilobulato-prolongato dorsaliter non appendiculato. Stigma non expansum; stylus 6-7.8 X 0.3 mm, ad basim extremam sparsissime glanduloso-puberulus in ovarii collum 0.3 mm immersus; ovarium 3-loculare et 1/2 inferum apicem versus modice glanduloso-setulosum pilis 0.1-0.25 mm longis.

Type Collection: R. S. Cowan & T. R. Soderstrom 2176 (holotype US 2639397; 7 isotypes to be distributed), collected along Mure-Mure Creek, Kaieteur Plateau, Guyana, elev. 450 m, 15-16 March 1962. "Shrub ca. 2-3 m tall in marsh forest edge. Inflorescence red; flowers white."

Clidemia involucrata has generally thinner plinerved leaf blades and flowers aggregated in bracteate heads, but similar stamens (anthers with ventrally tipped pores) and

pistil (the ovary only $1/4$ inferior, however). The general vegetative and inflorescence aspect of *C. ostentata* is rather like that of *Leandra* Sect. *Tschudya*, especially *L. purpurea* Gleason and *L. rufescens* (DC.) Cogn., but the floral details are very divergent. I do not believe that *C. ostentata* is very closely related to either *C. japurensis* DC. or *C. stellipilis* (Gleason) Wurdack, the former having plinerved leaf blades, smaller petals, dorsally tipped anther pores, and glabrous or very sparsely glandular-setulose ovary apices, the latter with an underlying stellulate pubescence on the vegetative parts, plinerved leaf blades, long-projecting external calyx teeth, torus within fine-setulose, smaller petals, and dorsally tipped anther pores. *Clidemia ostentata* was found in the course of gathering material for a rainforest diorama on a Smithsonian Institution Botany-Exhibits Expedition.

CLIDEMIA IMPARILIS Wurdack, sp. nov.

C. dimorphicae Macbride affinis, pedicellis longioribus floribus maioribus calycis dentibus exterioribus paulo eminentibus differt.

Ramuli teretes sicut petioli foliorum venae primariae subtus inflorescentiaque sparse pilis stellulato-pinoideis 0.05-0.1 mm longis plusminusve caducis puberuli. Folia in quoque pari disparilia ubique primum sparse stellulato-puberula mox glabrata firme membranacea distanter (2-3 mm) obscureque undulato-serrulata oblongo-elliptica apice subabrupte hebeti-acuminato basi cordulata, 5-nervata nervis secundariis principalibus 2-3 mm inter se distantibus nervulis subtus planis areolis ca. 0.4 mm latis. Folia maiora: petioli 0.2-0.4 cm longi; lamina (acumine excluso) 5.5-9.5 X 3-5.3 cm acumine 1-2 cm longo basi 0.3-0.5 cm cordulata. Folia minora: petioli 0.1 cm longi; lamina (acumine excluso) 1.2-1.5 X 0.8-1 cm acumine 0.3-0.4 cm longo basi 0.1-0.2 cm cordulata. Inflorescentiae in foliorum minorum axillis singulae racemiflorae 5-7 cm longae axe pedicellisque 0.2-0.3 mm diam. floribus 5-7; flores 5-meri, pedicellis 7-11 mm longis, bracteolis 0.3-0.4 X 0.1 mm mox caducis ca. 0.5 mm infra hypanthium insertis. Hypanthium (ad torum) 2.5 mm longum extus modice resinoso-granulosum pilis stellulatis caducis sparse intermixtis intus apicem versus sicut calycis lobi torusque sparsiuscule glandulis ca. 0.03 mm longis ornatum; calycis tubus 0.5-0.6 mm altus, lobis interioribus 0.2 mm altis remotis, dentibus exterioribus callosis 0.2-0.3 mm eminentibus. Petala modice minuteque granulosa 3.6 X 1.7 mm paulo obovato-oblonga. Stamina glabra in dimensionibus paulo dimorphica; filamenta 2.3-2.4 mm longa; antherarum thecae 1.8-1.9 vel 1.6-1.7 X 0.5 X 0.5 mm lanceatae poro dorsaliter inclinato 0.15 mm diam., connectivo ad basim dorsaliter dente hebeti truncato glabro 0.15-0.2 mm longo ornato. Stigma non expansum 0.25 mm diam.; stylus 5.7 X 0.3-0.25 mm glaber in ovarii collum ca. 0.4 mm immersus; ovarium 3-loculare et ca. 0.8 inferum, apice essentialiter glabro.

Type Collection: E. Asplund 19429 (holotype S), collected at forest edge near Vera Cruz, Prov. Pastaza, Ecuador, elev. ca. 900 m, 18 Feb. 1956. "Very slender shrub; flowers white."

Clidemia dimorpha has pedicels at anthesis 2-3 mm long, external calyx teeth inframarginal, petals usually 1.7-2 X 0.5-0.8 mm, and anther thecae 0.8-1 mm long, as well as dorsal appendages of the anther connectives usually minutely gland-edged, ovary apices moderately glandular, and leaf blades relatively narrower. Clidemia dimorpha has been collected several times in eastern Ecuador; however, two of the collections referred there at present (Mexia 6833, Canelos, with leaves more deeply toothed than usual, anthers somewhat long and with eglandular connective tooth, ovary apex nearly glabrous; Asplund 19250, Río Pastaza opposite Mera, in very young bud, with leaf blades tapering at the base) perhaps represent other taxa.

CLIDEMIA ABLUSA Wurdack, sp. nov.

C. flexuosae (Triana) Cogn. affinis, foliis eciliatis inflorescentia multiflora differt.

Ramuli teretes sicut folia primum densiuscule stellato-puberuli (pilis sessilibus ca. 0.25 mm diam.) mox glabrati. Folia disparilia subsessilia (petiolis 0.1-0.2 cm longis) firme membranacea, nervulis supra primum paulo elevato-reticulatis demum obscuris subtus eleganter elevato-reticulatis (areolis 0.2-0.3 mm latis). Folia maiora: lamina (acumine excluso) 9-13 X 2.5-4.5 cm oblongo-lanceata apice gradatim per 1-2 cm angustaque acuminato basi per ca. 1 cm subabrupte cordato-amplexicauli auriculis ca. 3-4 mm cordatis ad margines eciliata dentato-serrulata (dentibus ca. 2 mm inter se distantibus et ca. 0.3-0.4 mm profundis) 5-nervata vel paulo (ca. 0.5 cm) pseudoplinervata nervis secundariis principalibus 3-5 mm inter se distantibus. Folia minora: lamina 1.5-2.5 X 0.5-1 cm elliptico-lanceata 3-nervata basi rotundata. Inflorescentiae in foliorum maiorum axillis plerumque singulae racemiflorae 3.5-6 cm longae sparse stellulato-puberulae et glanduloso-setulosae (setulis 0.4-0.7 mm longis), axe pedicellisque ca. 0.2-0.3 mm diam.; flores 4-meri, pedicellis 9-14 mm longis, bracteolis 0.4 X 0.1-0.15 mm persistentibus ca. 0.5 mm infra hypanthium insertis. Hypanthium (ad torum) 3 mm longum paulo 8-costatum sparse obscureque stellulato-puberulum (pilis 0.1-0.15 mm latis) et praecipue in costis sparse glanduloso-setulosum setulis gracillimis 0.3-0.5 mm longis; calycis tubus 0.1-0.2 mm altus, lobis interioribus 0.9-1 X 1 mm orbicularibus, dentibus exterioribus lobos interiores aequantibus vel ca. 0.1-0.2 mm eminentibus. Petala 2.5-2.6 X 2 mm obovata apice ca. 0.3-0.5 mm emarginato et interdum setulis 1-3 glanduliferis ornato alioqui glabra. Stamina isomorpha glabra; filamenta 1.9-2 mm longa; antherarum thecae 2-2.1 X 0.4-0.45 X 0.4 mm lanceatae poro 0.1 mm diam. dorsaliter inclinato; connectivum non vel vix (0.1 mm) prolongatum ad basim dente hebeti glabro 0.2-0.25 X 0.2 mm dorsali armatum. Stigma non expansum 0.35 mm

diam.; stylus 6.1 X 0.4-0.35 mm glaber in ovarii collum 0.4 mm immersus; ovarium 3-loculare et ca. 0.8 inferum apice glabro.

Type Collection: E. Asplund 19183 (holotype S), collected in forest at Mera, Prov. Pastaza, Ecuador, elev. ca. 1100 m, 2 Feb. 1956. "Slender epiphytic shrub; calyx red; petals white; anthers white."

Clidemia flexuosa has ciliate leaves (the smaller broadly ovate and obtuse to rounded at the apex), solitary flowers on pedicels ca. 1 mm long in the upper leaf axils (but hypanthia basally setulose with caducously gland-tipped hairs), obviously projecting external calyx teeth, longer and relatively narrower petals, and more obscurely (ca. 0.1 mm) toothed stamen connectives. Other relatives of C. ablusa in stamen and pistil form include C. farinasii Wurdack (relatively broader leaves with the larger ones cordate but not contracted-clasping at the base, long-projecting external calyx teeth, much larger petals), C. semiyuga (Gleason) Wurdack (essentially glabrous stems and leaves, one member of each leaf-pair completely aborted, external calyx teeth projecting ca. 0.3 mm, glabrous hypanthia), and C. campii Wurdack (bases of the large leaves not cordate-clasping, inflorescences shorter, hypanthia without gland-tipped hairs, inner calyx lobes only 0.3-0.4 mm long, relatively narrower petals). Perhaps C. campii is closer to C. ablusa than C. flexuosa in overall morphology.

CLIDEMIA CAUDATA Wurdack, sp. nov.

C. ecuadorensi Gleason affinis, floribus omnibus 4-meris petalis pro ratione latioribus differt.

Frutex ca. 2 m altus; ramuli primum obscure tetragoni mox teretes sicut folia inflorescentia hypanthiaque primum sparse amorpho-squamulosi mox glabrati. Folia in quoque pari paulo (ca. 3:2) disparilia; petioli 0.5-1(-1.3) cm longi; lamina (acumine excluso) (3.5-)-6-10 X (1.5-)-2.5-4.5 cm apice subabrupte (1-)-2-3.5 cm caudato-acuminato basi acuta, firme membranacea, ad margines primum obscure undulato-denticulata demum integra, 5-plinervata pari interiore 1-3 cm et pari exterioriore 0.5-1 cm supra basim (et interdum subalternatim) divergenti in axillis interdum saccato-connectis nervis secundariis principalibus ca. 2-3 mm inter se distantibus sicut nervulis supra obscure elevatis subtus paulo elevatis nervulorum areolis ca. 0.4-0.5 mm latis. Inflorescentiae ca. 2 cm longae in foliorum superiorum axillis singulae prope basim divaricate 3-furcatae pauciflorae; flores omnino 4-meri, pedicellis 2.4-3 mm longis et 1-1.8 mm infra hypanthium bibracteolatis, bracteolis 0.8 mm longis lanceatis persistentibus. Hypanthium (ad torum) 2-2.1 mm longum teres; calycis tubus 0.15-0.2 mm longus, lobis interioribus 0.5-0.6 mm longis ovatis, dentibus exterioribus crassiusculis ca. 0.2 mm eminentibus. Petala plerumque alba 1.8 X 1.1-1.3 mm oblongo-ovovata intus vix granulosa extus glabra. Stamina isomorphica glabra; filamenta 1.5-1.8 mm longa; antherarum thecae 0.9-1 X 0.4-0.5 X 0.35-0.5 mm oblongae exappendiculatae, poro terminali 0.15 mm diam. Stigma truncatum 0.2 mm diam.;

stylus 6 X 0.2-0.15 mm glaber in ovarii apicem 0.2-0.3 mm immersus; ovarium 4-loculare et omnino inferum, apice glandulis ca. 0.03 mm longis sparse induto; fructus teres.

Type Collection: Manuel Lugo 6 (holotype S; isotype S), collected at Mera, Prov. Pastaza, Ecuador, 1 March 1940. "Flowers yellow."

Paratypes (all Ecuador): Prov. Pastaza: Asplund 18782 (S), from Mera, elev. 1100 m; Fagerlind & Wibom 1147 (S), from 8 km north of Puyo; Fagerlind & Wibom 1180 (S), from 3.5 km north of Puyo. Prov. Morona-Santiago: Asplund 19253 (S), from Río Pastaza opposite Mera, elev. ca. 1000 m.

Clidemia ecuadorensis has the same vegetative facies, but 5-merous flowers and narrowly oblong petals 2.3-2.4 X 0.7-0.8 mm; buds and mature flower remnants on Mexia 8431 (US) show anthers like those of C. caudata (1.2 X 0.5 mm), but a 5-celled (rather than 3-celled, as originally cited) ovary. Another close relative, C. ombrophila Gleason of Central America, has leaf blades with only three primary veins (but with pocules slightly developed in the leaf axils beneath). With some misgivings, I have also referred two imperfect Ecuadorian collections with slightly larger leaves and inflorescences to C. caudata: Prescott & Wiggins 17 (US), El Topo, Tungurahua, elev. 1600 m; Fagerlind & Wibom 2507, "Timbre", Esmeraldas.

CLIDEMIA ASPLUNDII Wurdack, sp. nov.

C. biolleyanae Cogn. affinis, foliorum subtus venulis creberrimis maturitate paulo elevato-reticulatis hypanthiis granuloso-furfuraceis non stellato-puberulis differt.

Ramuli teretes sicut foliorum venae primariae subtus inflorescentiarum axes et ramique modice vel dense pilis stellatis plerumque capitulo resinoso terminatis induti. Folia in quoque pari plusminusve (2: 3-5) disparilia; petioli (0.5-)1-3.5 cm longi; lamina (7-)10-20 X (6-)7-13.5 cm ovato-elliptica apice breviter (0.3-1 cm) hebeti-acuminato basi rotundata vel paulo (usque ad 1 cm) cordata, membranacea et distanter (3-5 mm) undulato-serrulata, supra primum sparse stellato-puberula mox glabrata, subtus in nervis secundariis tertiariisque sparsiuscule stellato-puberula (pilis ca. 0.25 mm diam.) et in venulis superficieque glabra, 5-nervata (nervis inframarginalibus neglectis) nervis secundariis ca. 5-7 mm inter se distantibus sicut tertiariis nervulis subtus elevatis areolis ultimis 0.2-0.3 mm latis. Panicula primum terminalis demum lateralis paulo nutans 6-10 X 5-10 cm (pedunculo 1.5-3 cm longo incluso) ramis divaricatis; flores 4-meri, pedicellis 3-3.7 mm longis et ca. 0.7 mm infra hypanthium articulatis, bracteolis ca. 0.3 mm longis angustis subsistentibus. Hypanthium (ad torum) 3 mm longum paulo 8-costatum extus dense glanduloso-resinosum intus sparse glandulosum; calycis tubus 0.2 mm altus, lobis interioribus 0.35 mm altis late ovatis, dentibus exterioribus crassis divergentibus non vel paullulo (0.1 mm) eminentibus. Petala dense granulosa 1.6 X 1.6-1.7 mm obovato-suborbicularia. Stamina isomorphica; filamenta 1.5-1.6 mm longa glabra;

antherarum thecae 1.9 X 0.35 X 0.3 mm lanceatae poro 0.1 mm diam. dorsaliter inclinato; connectivum ca. 0.1 mm prolongatum dorsaliter dente descendenti hebeti 0.25-0.3 X 0.25-0.3 mm interdum glandulis 1-3 marginato armatum. Stigma paulo expansum 0.4 mm diam.; stylus 6 X 0.25 mm glaber; ovarium 4-loculare et omnino inferum, apice glandulis clavatis ca. 0.03 mm longis ornato; semina 0.5 X 0.25 mm pyramidata laevia.

Type Collection: E. Asplund 19806 (holotype S), collected at Macas on bank of Río Upano, Prov. Morona-Santiago, Ecuador, elev. ca. 800 m, 18 March 1956. "Low slender sparingly branched shrub; petals white; anthers olivaceous; fruits red (hardly ripe)."

Paratypes (both Prov. Napo, Ecuador): Asplund 9055 (S), from between Tena and Napo; Grubb, Lloyd, Pennington, & Whitmore 21 (US), from north of Tena, elev. 600 m.

Clidemia biolleyana has the leaf veinlets beneath laxly reticulate (areoles mostly 1-2 mm wide), hypanthia moderately to densely stellulate-puberulous, and external calyx teeth setula-tipped, but similar petals, stamens, and style. The vegetative pubescence of C. biolleyana is composed of only arachnoid-stellate hairs, with none of the peculiar resinous-headed trichomes characteristic of C. asplundii.

OSSAEA MICRANTHA (Sw.) Macf.

Ossaea caudata Cogn., DC. Mon. Phan. 7: 1066. 1891.

Ossaea tetragona Cogn., Bull. Soc. Bot. Belg. 30(1): 265. 1891.

In Central America, two micromorphologic nodes occur. One has more-or-less obviously tetragonal branchlets, leaf apices generally only shortly and gradually acuminate, and petals usually 1 mm or less wide and externally moderately scaly; the plants generally grow at elevations of 0-700 m and match Jamaican material of O. micrantha (including O. tetragona). The other variant has usually terete branchlets, leaf apices more-or-less long-acuminate, and corollas 1.3-1.7 mm wide and externally nearly or quite glabrous (including O. caudata); the Central American collections are from (1100-)1500-2400 m. In South America however, this correlation breaks down and it seems best to consider all as one species, with vegetative pubescence quantity also variable.

OSSAEA ASPLUNDII Wurdack, sp. nov.

O. micranthae (Sw.) Macf. affinis, foliis plerumque minoribus subtus subsistententer granuloso-furfuraceis calycis lobis interioribus plus evolutis dentibus exterioribus eminentibus differt.

Ramuli teretes sicut petioli foliorum venae primariae et secundariae inflorescentiaque dense persistenterque granuloso-puberuli indumento ca. 0.05-0.1 mm alto. Petioli 0.5-1.2 X 0.07 cm interdum apicem versus adaxialiter sparsissime setulosi; lamina 4.5-8 X 1.3-2.5 cm oblongo-lanceata apice gradatim per 0.7-1.3 cm acuminato basi acuta, firme membranacea et integra,

supra primum sparse granuloso-puberula mox glabrata, subtus sicut hypanthium extus in venulis superficieque densiuscule granuloso-puberula indumento ca. 0.03 mm alto, 5-nervata pari interiore ad basim per ca. 0.3 cm costam parallelo nervis secundariis ca. 2-2.5 mm inter se distantibus nervulis subtus planis ob indumentum occultis. Inflorescentiae in foliorum superiorum axillis laterales in quoque nodo duae 1 (vel in fructu 2) cm longae floribus 5-7; flores 4-meri, pedicellis 3.5-5 mm longis, bracteolis ca. 0.4 mm longis angustis valde caducis ca. 0.5 mm infra hypanthium insertis. Hypanthium (ad torum) ca. 1.3 mm longum paulo 8-costatum; calycis tubus ca. 0.3 mm altus, lobis interioribus 0.7 mm longis triangularibus, dentibus exterioribus ca. 0.4-0.5 (vel in fructu ca. 1) mm eminentibus. Petala ca. 2.5 X 0.7 mm lanceata acuta. Antherarum thecae ca. 1 X 0.3 X 0.35 mm oblongae dorsaliter minute porosae; connectivum vix (0.1 mm) prolongatum, dente dorsali descendenti 0.25-0.3 X 0.1 mm glandulis 0.1 mm longis modice marginato. Stigma non expansum; stylus 4 X 0.15 mm glaber; ovarium 4-loculare et ca. 3/4 inferum, apice conico ca. 0.3 mm alto sparse glandulis 0.05 mm longis praedito.

Type Collection: E. Asplund 18577 (holotype S), collected in forest near Alpayacu, Mera, Prov. Pastaza, Ecuador, elev. ca. 1100 m, 23 Nov. 1955. "Slender shrub ca. 0.5 m high. Flowers white."

Ossaea micrantha has leaf blades generally 8-20 X 4-7 cm with the pubescence beneath early caducous on the actual surface, oblate calyx lobes only 0.1-0.2 mm long, and external calyx teeth minute and not projecting. No other intimate relatives are apparent (and certainly not O. resinosa Gleason). The mature floral dimensions given for O. asplundii are dry, from the single open flower on the holotype.

OSSAEA MACROPHYLLA (Benth.) Cogn.

Originally described from Cocos Island material, this species has a considerably greater geographic range than usually indicated. The known distribution includes Costa Rica (Williams et al 28676, Río Cacao, Puntarenas, 900 m, distributed as Miconia nutans), Panama (Duke 15735, Cerro Campamento, Darien), Colombia (Duke 11366, Río Salaquí, Chocó, elev. 200 m; Fernandez 403, Isla Gorgona, Nariño; Cuatrecasas 10946, Río San Miguel, Putumayo, elev. 400 m), and Ecuador (Pastaza: Vera Cruz, elev. ca. 900 m, Asplund 19475, H. Lugo 30; Canelos, elev. 550 m, Harling 3317; near Puyo, Fagerlind & Wibom 1114). The species is characterized by the glandular-puberulous long (0.7-0.8 mm, about as long as the thecae) prolongation of the stamen connective, toral corona within developed and densely gland-edged, and ovary apex conic and glandular-puberulous. The lanceate petals are 3.5-4.6 mm long and sparsely (Central America, Pacific coast of Colombia) to moderately (Amazonian Colombian and Ecuador) appressed-puberulous externally. The foliage, especially in the lax venulation, resembles that of O. bracteata Triana, which however lacks the cobwebby caducous cauline pubescence

and has broader bracts, much coarser granular hypanthial pubescence, and stamen connectives barely (0.1 mm) prolonged (but a similar glandular connective tooth).

OSSAEA SESSILIFOLIA (Triana) Wurdack, comb. nov.

Oxymeris sessilifolia Triana, Trans. Linn. Soc. Bot. 28: 93. 1871.

Leandra sessilifolia (Triana) Cogn., Mart. Fl. Bras. 14(4): 75. 1886.

Ossaea grandifolia Gleason, Bull. Torrey Club 52: 457. 1925.

Cogniaux (DC. Mon. Phan. 7: 670. 1891) did not see the Triana collection. The species is still known only from the Pacific lowlands of Colombia, with recent collections from Chocó (von Sneider A41, Nuquí; Killip & Cuatrecasas 39147, Quebrada Togoroma), El Valle (Schultes & Villarreal 7352 and Cuatrecasas 16540, Río Calima; Killip & García 33429, Córdoba; Cuatrecasas 15711, Río Yurumangui; Cuatrecasas 17420, Río Cajambre), and Nariño (Killip & García 33186, Isla Gorgona), elev. 0-100(-1000) m, but is certainly to be expected in Esmeraldas, Ecuador.

OSSAEA LAXIVENULA Wurdack, sp. nov.

O. sessilifoliae (Triana) Wurdack affinis, petiolis liberis longioribus calycis lobis non vel vix evolutis petalis maioribus differt.

Arbor parva vel frutex 1.5-8 m; ramuli teretes primum sicut folia novella inflorescentia hypanthiaque sparse indumento amorpho-squamato et glandulis 0.05 mm longis induti mox glabrati. Petioli liberi (1-)1.5-3 cm longi; lamina (11-)14-29 X (5-)7-13.5 cm apice hebeti-acuto vel paulo (ad 1 cm) hebeti-acuminato basi acuta, membranacea et integra vel obscure distanterque undulato-serrulata, breviter (plerumque 1-1.5 cm) 5-plinervata nervis secundariis 5-10 mm inter se distantibus nervulis subtus planis areolis laxis 2-3 mm latis. Panicula terminalis 7-11 X 7-10 cm multiflora ramis primariis oppositis plerumque paulo refractis; flores 4-meri, pedicellis plerumque 1-2 mm longis, bracteolis 0.3-0.5 mm longis subpersistentibus ca. 0.1-0.2 mm infra hypanthium insertis. Hypanthium (ad torum) 1.7-2 mm longum crasse 8-costatum; calycis tubus 0.3-0.4 mm altus, lobis 0.1 mm altis, dentibus exterioribus minutis non eminentibus; torus sicut hypanthium intus et ovarii apex sparse vel sparsissime glandulis 0.03 mm longis indutus. Petala 3-3.4 X 0.8-1 mm lanceata extus sparse squamosa alioqui glabra. Stamina isomorphica; filamenta glabra; antherarum thecae 1-1.2 X 0.3-0.35 X 0.3-0.4 mm oblongae poro 0.1 mm diam. dorsaliter rimoso-inclinato; connectivum 0.3-0.5 mm prolongatum, dente dorso-basali 0.3-0.4 X 0.25-0.3 mm glandulis 0.1-0.15 mm longis marginato. Stigma non expansum 0.15-0.2 mm diam.; stylus 3.7-4.2 X 0.25-0.1 mm glaber in ovarii apicem 0.2-0.3 mm immersus; ovarium 4-loculare et 3/4 inferum, apice conico (collo incluso) 0.5-0.7 mm alto.

Type Collection: G. Klug 1816 (holotype US 1456541), collected at Umbria, Com. Putumayo, Colombia, elev. 325 m, Oct.-Nov. 1930. "Tree 8 m; petals white; anthers yellow."

Paratypes (all US): Colombia, Putumayo: Cuatrecasas 10945, from Río San Miguel between Sipenae and Churruyaco, elev. 400 m; King & Guevara 6205 and 6234, from 15 km northwest of Puerto Asís, elev. ca. 300 m. Ecuador, Pastaza: Asplund 19442 and 19461, from Vera Cruz, elev. ca. 900 m.

Ossaea sessilifolia has similar lax leaf venule reticulation and 4-merous flowers, but leaf-blades long-decurrent at the base (free petioles only 0.3-0.8 cm long) with the inner pair of primary veins diverging 3-5 cm above the base, calyx lobed ca. 0.4 mm, and petals 2-2.3 mm long and densely scurfy externally. Ossaea robusta (Triana) Cogn. differs in the much denser leaf veinlet reticulation (areoles ca. 0.2 mm wide), much more obvious cauline and inflorescence pubescence, and 5-merous flowers; this species is now known from Costa Rica, Panama, Colombia (Chocó, El Valle, Nariño, Putumayo), Ecuador (Esmeraldas, Napo, Pastaza, Morona-Santiago), and Peru (Huánuco, San Martín), with Amazon-drainage collections having (always?) slightly larger and more pubescent petals. Ossaea robusta (Triana) Cogn. fma. glabrata Mgf. was described as a vegetatively glabrous population from eastern Ecuador; I suspect that this forma may be the same as O. laxivenula, but Markgraf's taxon will probably remain enigmatic until the Pacapaca region is recollected.

OSSAEA QUADRISULCA (Naud.) Wurdack, comb. nov.

Clidemia quadrisulca Naud., Ann. Sci. Nat. ser. 3 Bot. 17: 364. 1852.

Leandra axilliflora Pilger, Verh. Bot. Ver. Brand. 47: 168. 1905.

Cogniaux (Mart. Fl. Bras. 14, 4: 196. 1886) had synonymized C. quadrisulca under Leandra secundiflora (DC.) Cogn., which however has much sparser lower leaf surface pubescence, terminal inflorescences, coarser and sparser hypanthial pubescence, and a glabrous ovary (Phytologia 20: 377. 1970). Ule (Notizbl. Bot. Gart. Berl. 6: 368. 1915) synonymized L. axilliflora under Ossaea petiolaris, despite Pilger's having noted 5-merous flowers in his original description; O. petiolaris differs from O. quadrisulca in the appressed (usually) cauline pubescence, much shorter (averaging 0.3-0.5 mm, rather than 1-1.5 mm) upper leaf surface hairs, 4-merous flowers, anthers with a basal connective thickening, and 4-celled moderately setulose ovary. Ossaea quadrisulca has truly lateral inflorescences (in opposite upper leaf axils), very fine and in part inconspicuously gland-tipped or eglandular hypanthial hairs, oblong anthers 1-1.5 mm long (slightly dimorphic in size) with the connective neither thickened nor prolonged at the base, and a 3-celled ovary with the apical lobes each with a single caducous setula 0.05-0.15 mm long; the species has recently been collected in Prov. Pastaza, Ecuador, elev. 300-1100 m (Puyo-Canelos, Mexia 6839;

Vera Cruz, Asplund 19452; Mera, Asplund 19282, 19575, 19600. Two collections, both with upper leaf surface pubescence as in O. quadrisulca, needing future evaluation in this complex are Schnell 658, from Valle Escondida, Cartago, Costa Rica (cauline pubescence appressed, flowers 5-merous, ovary 4-celled with 2-3 glandular setulae on each lobe) and Vargas 18447, from Quispicanchis, Cuzco, Peru (cauline pubescence appressed, leaves beneath glabrous on the veinlets and surface, flowers 4-merous).

NOTES ON NEW AND NOTEWORTHY PLANTS - LXII

Harold N. Moldenke

VERBENA RECTILOBA Moldenke, sp. nov.

Herba radicans; caulibus prostratis obtuse tetragonis obscure pilosulis vel glabratis, angulis longitudinaliter porcatis; foliis numerosis valde incis, lacinis uniformiter linearibus rectis saepe bi- vel trifurcatis minutissime strigillosis vel glabratis ad apicem subulatis; inflorescentiis spicatis terminalibus multifloris ubique minutissime adpresso-strigillosis; calicibus 1 cm. longis; corollis violaceis, tubo non exsertis.

Creeping herb; stems prostrate, apparently to about 50 cm. long, the tips ascending or erect, obtusely tetragonal, very obscurely and microscopically scattered-pilosulous or glabrate, the angles somewhat ridged; principal internodes elongate, mostly 4-6 cm. long; leaves decussate-opposite, numerous throughout the stems and on short erect branchlets, 3-5.5 cm. long, 2-4 cm. wide, deeply dissected to the midrib, the lobes linear, 1-1.5 mm. wide, very uniform throughout, not at all widened at the base, often bi- or trifurcate with the branches exactly similar, subulate-tipped, perfectly straight, microscopically and very sparsely strigillose or glabrous, the very slender linear petiole 1-2 cm. long and only very slightly narrower than the leaf-divisions; inflorescence spicate, terminal, apparently to about 9 cm. long, rather many-flowered, but not especially dense, microscopically white-strigillose throughout with closely appressed white hairs; calyx cylindric, about 1 cm. long, microscopically appressed-strigillose with antrorse hairs, the rim 5-apiculate, the apiculations 2-3 mm. long, irregular, erect or very slightly curved at the tip, 2 longer than the other 3; corolla violet, the tube about 1 cm. long, not exserted from the calyx-tube, the limb about 9 mm. wide.

The type of this most distinct and beautiful species was collected by A. Krapovickas, C. L. Cristóbal, and C. Quarín (no. 22825) at Rosario do Sul, on the sandy banks of the Rio Santa Maria, in the municipality of Rosario do Sul, Rio Grande do Sul, Brazil, on January 20, 1973, and is deposited in my personal herbarium at Plainfield, New Jersey.